

1 of 1 DOCUMENT

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

December 31, 1996

Method and apparatus for reducing power consumption in a  
computer system using virtual device drivers

REISSUE: February 21, 2002 - Reissue Application filed Ex. Gp.: 1635; Re. S.N. 10/081,659 May 28, 2002; December 31, 1998 - Reissue Application filed Dec. 31, 1998 (O.G. Mar. 2, 1999) Ex. Gp.: 2781; Re. S.N. 09/224,620 March 2, 1999

INVENTOR: Marisetty, Suresh K., San Jose, CA

APPL-NO: 08346040

FILED-DATE: November 29, 1994

GRANTED-DATE: December 31, 1996

ASSIGNEE-AT-ISSUE: Intel Corporation, Santa Clara, CA

ASSIGNEE-AFTER-ISSUE: January 24, 1995 - ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS)., INTEL CORPORATION 2200 MISSION COLLEGE BLVD. SANTA CLARA, CA 95052,, Reel and Frame Number: 007341/0694

LEGAL-REP: Blakely, Sokoloff, Taylor & Zafman

US-MAIN-CL: 713#324

SEARCH-FLD: 395##750 , 395##280 , 364##707

IPC-MAIN-CL: G 06F013#0

PRIM-EXMR: Sheikh, Ayaz R.

ASST-EXMR: Travis, John

CORE TERMS: hardware, pmvxd, driver, timer, virtual, computer system, software, vxd, interrupt, memory ...

ENGLISH-ABST:

A power management mechanism for use in a computer system having a bus, a memory for storing data and instructions, and a central processing unit (CPU). The CPU runs an operating system having a power management virtual device driver (PMVxD) responsible for performing idle detection for devices. The PMVxD performs idle detection using event timers that provide an indicator as to the activity level. The PMVxD places idle local devices in a reduced power consumption state when no activity has occurred for a predetermined period of time.

**LEXIS-NEXIS**  
**Library: PATENT**  
**File: ALL**

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**LEXIS-NEXIS**  
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**LEXIS-NEXIS**  
**Library: PATENT**  
**File: JNLS**

us5590342/pn

\*\* SS 1: Results 1

Search statement 2

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1/1 PLUSPAT - (C) QUESTEL-ORBIT- image  
PN - US5590342 A 19961231 [US5590342]  
TI - (A) Method and apparatus for reducing power consumption in a computer system using virtual device drivers  
PA - (A) INTEL CORP (US)  
IN - (A) MARISSETTY SURESH K (US)  
AP - US34604094 19941129 [1994US-0346040]  
PR - US34604094 19941129 [1994US-0346040]  
IC - (A) G06F-013/00  
EC - G06F-001/32P  
- G06F-011/34C4A  
- G06F-011/34T6  
ICO - S06F-201/393  
PCL - ORIGINAL (O) : 713324000; CROSS-REFERENCE (X) : 710100000  
DT - Basic  
CT - US5167024; US5276888; US5404321; US5404546  
STG - (A) United States patent  
AB - A power management mechanism for use in a computer system having a bus, a memory for storing data and instructions, and a central processing unit (CPU). The CPU runs an operating system having a power management virtual device driver (PMVxD) responsible for performing idle detection for devices. The PMVxD performs idle detection using event timers that provide an indicator as to the activity level. The PMVxD places idle local devices in a reduced power consumption state when no activity has occurred for a predetermined period of time.

1/1 LGST - (C) LEGSTAT  
PN - US 5590342 [US5590342]  
AP - US 346040/94 19941129 [1994US-0346040]  
DT - US-P  
ACT - 19941129 US/AE-A  
APPLICATION DATA (PATENT)  
{US 346040/94 19941129 [1994US-0346040]}  
- 19950124 US/AS02  
ASSIGNMENT OF ASSIGNOR'S INTEREST  
INTEL CORPORATION 2200 MISSION COLLEGE BLVD. SANTA CLARA, CA 95052 \*  
MARISSETTY, SURESH K. : 19950118  
- 19961231 US/A  
PATENT  
- 19970401 US/CC  
CERTIFICATE OF CORRECTION  
- 19990302 US/RF  
REISSUE APPLICATION FILED  
981231  
- 20020528 US/RF  
REISSUE APPLICATION FILED  
20020221  
UP - 2002-24

1/1 CRXX - (C) CLAIMS/RRX  
PN - 5,590,342 A 19961231 [US5590342]  
PA - Intel Corp  
ACT - 19981231 REISSUE REQUESTED

ISSUE DATE OF O.G.: 19990302  
REISSUE REQUEST NUMBER: 09/224620  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2781

Reissue Patent Number:

- 20020221 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20020528  
REISSUE REQUEST NUMBER: 10/081659  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1635

Reissue Patent Number:

1/3 PAST - (C) Thomson Derwent  
AN - 200222-001891  
PN - 5590342 A [US5590342]  
OG - 2002-05-28  
ACT - REISSUE APPLICATION FILED

2/3 PAST - (C) Thomson Derwent  
AN - 199909-001282  
PN - 5590342 A [US5590342]  
OG - 1999-03-02  
ACT - REISSUE APPLICATION FILED

3/3 PAST - (C) Thomson Derwent  
AN - 199713-000184  
PN - 5590342 A [US5590342]  
OG - 1997-04-01  
ACT - CERTIFICATE OF CORRECTION

fam us5590342/pn

1 Patent Groups  
\*\* SS 1: Results 1

Search statement 2

?famstate nonstop

1/1 INPADOC - (C) INPADOC  
PN - US 5590342 A 19961231 [US5590342]  
TI - METHOD AND APPARATUS FOR REDUCING POWER CONSUMPTION IN A COMPUTER  
SYSTEM USING VIRTUAL DEVICE DRIVERS  
IN - MARISSETTY SURESH K [US]  
PA - INTEL CORP [US]  
AP - US 346040/94-A 19941129 [1994US-0346040]  
PR - US 346040/94-A 19941129 [1994US-0346040]  
IC - G06F-013/00

1/1 LEGALI - (C) LEGSTAT  
PN - US 5590342 [US5590342]  
AP - US 346040/94 19941129 [1994US-0346040]  
DT - US-P  
ACTE- 19941129 US/AE-A  
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20020221  
UP - 2002-24